



SEQUENCE LISTING

<110> The Board of Trustees of the University of Illinois
Costa, Robert
Raychaudhuri, Pradip
Wang, Xinhe
Kalinichenko, Vladimir
Major, Michael
Wang, I-Ching

<120> METHODS OF INHIBITING TUMOR CELL PROLIFERATION

<130> 03-284-E

<140> US 10/809,144

<141> 2004-03-25

<150> US 60/457,257

<151> 2003-03-25

<150> US 60/474,075

<151> 2003-10-23

<150> US 60/540,691

<151> 2004-01-30

<150> US 60/549,691

<151> 2004-03-02

<160> 13

<170> PatentIn version 3.0

<210> 1

<211> 2737

<212> DNA

<213> Homo Sapiens

<400> 1

ggagcccgga gcccgccctc ggagctacgg cctaaccggcg gcggcgactg cagtctggag	60
ggtccacact tgtgattctc aatggagagt gaaaacgcag attcataatg aaaactagcc	120
cccgtcggcc actgattctc aaaagacgga ggctgcccct tcctgttcaa aatgccccaa	180
gtgaaacatc agaggaggaa cctaagagat ccctgcccc acaggagtct aatcaagcag	240
aggcctccaa ggaagtggca gagtccaact cttgcaagtt tccagctggg atcaagatta	300
ttaaccaccc caccatgccc aacacgcaag tagtggccat cccaacaat gctaatatc	360
acagcatcat cacagcactg actgccaagg gaaaagagag tggcagtagt gggcccaaca	420
aattcatcct catcagctgt gggggagccc caactcagcc tccaggactc cggcctcaaa	480
cccaaaccag ctatgatgcc aaaaggacag aagtgaccct ggagaccttg ggacaaaaac	540

ctgcagctag ggatgtgaat cttcctagac cacctggagc cctttgagag cagaaacggg	600
agacctgtgc agatgggtgag gcagcaggct gcactatcaa caatagccta tccaacatcc	660
agtggcttcg aaagatgagt tctgatggac tgggctcccg cagcatcaag caagagatgg	720
agggaaaagga gaattgtcac ctggagcagc gacagggttaa ggttgaggag ccttcgagac	780
catcagcgtc ctggcagaac tctgtgtctg agcggccacc ctactcttac atggccatga	840
tacaattcgc catcaacagc actgagagga agcgcagac tttgaaagac atctatacgt	900
ggattgagga ccactttccc tactttaagc acattgcaa gccaggctgg aagaactcca	960
tccgccacaa cctttccctg cacgacatgt ttgtccggga gacgtctgcc aatggcaagg	1020
tctccttctg gaccattcac ccagtgcca accgctactt gacattggac caggtgttta	1080
agcagcagaa acgaccgaat ccagagctcc gccggaacat gaccatcaaa accgaactcc	1140
ccctgggctc acggcggaag atgaagccac tgctaccacg ggtcagctca tacctggtac	1200
ctatccagtt cccggtgaac cagtcactgg tgttgagcc ctcggtgaag gtgccattgc	1260
ccctggcggc ttccctcatg agctcagagc ttgcccggca tagcaagcga gtccgcattg	1320
ccccaaaggt gctgctagct gaggagggga tagctcctct ttcttctgca ggaccagggg	1380
aagaggagaa actcctgttt ggagaagggt tttctccttt gcttccagtt cagactatca	1440
aggaggaaga aatccagcct ggggaggaaa tgccacactt agcgagaccc atcaaagtgg	1500
agagccctcc cttggaagag tggccctccc cggcccatc tttcaaagag gaatcatctc	1560
actcctggga ggattcgtcc caatctcca cccaagacc caagaagtcc tacagtgggc	1620
ttaggtcccc aacccggtgt gtctcgaaa tgcttgatgat tcaacacagg gagaggaggg	1680
agaggagccg gtctcgagg aaacagcatc tactgcctcc ctgtgtggat gagccggagc	1740
tgctcttctc agagggggccc agtacttccc gctggggccg agagctccc ttcccagcag	1800
actcctctga ccctgcctcc cagctcagct actcccagga agtgggagga ccttttaaga	1860
caccatttaa ggaaacgctg cccatctcct ccaccccgag caaatctgtc ctcccagaa	1920
ccctgaatc ctggaggctc acgccccag ccaaagtagg gggactggat ttcagcccag	1980
tacaaacctc ccagggtgcc tctgaccctc tgctgaccc cctggggctg atggatctca	2040
gcaccactcc cttgcaaagt gctccccccc ttgaatcacc gcaaaggctc ctcagttcag	2100
aacccttaga cctcatctcc gtcccctttg gcaactcttc tccctcagat atagacgtcc	2160
ccaagccagg ctccccggag ccacaggttt ctggccttgc agccaatcgt tctctgacag	2220
aaggcctggg cctggacaca atgaatgaca gcctcagcaa gatcctgctg gacatcagct	2280

ttcctggcct ggacgaggac ccactgggcc ctgacaacat caactgggtcc cagtttattc 2340
 ctgagctaca gtagagccct gcccttgccc ctgtgctcaa gctgtccacc atcccgggca 2400
 ctccaaggct cagtgcaccc caagcctctg agtgaggaca gcaggcaggg actgttctgc 2460
 tcctcatagc tccctgctgc ctgattatgc aaaagtagca gtcacaccct agccactgct 2520
 gggaccttgt gttccccaag agtatctgat tcctctgctg tccctgccag gagctgaagg 2580
 gtgggaacaa caaaggcaat ggtgaaaaga gattaggaac cccccagcct gtttccattc 2640
 tctgcccagc agtctcttac cttccctgat ctttgcaggg tgggccgtgt aaatagtata 2700
 aattctccaa attatcctct aattataaat gtaagct 2737

<210> 2
 <211> 748
 <212> PRT
 <213> Homo sapiens

<400> 2

Met	Lys	Thr	Ser	Pro	Arg	Arg	Pro	Leu	Ile	Leu	Lys	Arg	Arg	Arg	Leu	1	5	10	15
Pro	Leu	Pro	Val	Gln	Asn	Ala	Pro	Ser	Glu	Thr	Ser	Glu	Glu	Glu	Pro	20	25	30	
Lys	Arg	Ser	Pro	Ala	Gln	Gln	Glu	Ser	Asn	Gln	Ala	Glu	Ala	Ser	Lys	35	40	45	
Glu	Val	Ala	Glu	Ser	Asn	Ser	Cys	Lys	Phe	Pro	Ala	Gly	Ile	Lys	Ile	50	55	60	
Ile	Asn	His	Pro	Thr	Met	Pro	Asn	Thr	Gln	Val	Val	Ala	Ile	Pro	Asn	65	70	75	80
Asn	Ala	Asn	Ile	His	Ser	Ile	Ile	Thr	Ala	Leu	Thr	Ala	Lys	Gly	Lys	85	90	95	
Glu	Ser	Gly	Ser	Ser	Gly	Pro	Asn	Lys	Phe	Ile	Leu	Ile	Ser	Cys	Gly	100	105	110	
Gly	Ala	Pro	Thr	Gln	Pro	Pro	Gly	Leu	Arg	Pro	Gln	Thr	Gln	Thr	Ser	115	120	125	
Tyr	Asp	Ala	Lys	Arg	Thr	Glu	Val	Thr	Leu	Glu	Thr	Leu	Gly	Pro	Lys	130	135	140	
Pro	Ala	Ala	Arg	Asp	Val	Asn	Leu	Pro	Arg	Pro	Pro	Gly	Ala	Leu	Cys	145	150	155	160
Glu	Gln	Lys	Arg	Glu	Thr	Cys	Ala	Asp	Gly	Glu	Ala	Ala	Gly	Cys	Thr	165	170	175	

Ile Asn Asn Ser Leu Ser Asn Ile Gln Trp Leu Arg Lys Met Ser Ser
 180 185 190
 Asp Gly Leu Gly Ser Arg Ser Ile Lys Gln Glu Met Glu Glu Lys Glu
 195 200 205
 Asn Cys His Leu Glu Gln Arg Gln Val Lys Val Glu Glu Pro Ser Arg
 210 215 220
 Pro Ser Ala Ser Trp Gln Asn Ser Val Ser Glu Arg Pro Pro Tyr Ser
 225 230 235 240
 Tyr Met Ala Met Ile Gln Phe Ala Ile Asn Ser Thr Glu Arg Lys Arg
 245 250 255
 Met Thr Leu Lys Asp Ile Tyr Thr Trp Ile Glu Asp His Phe Pro Tyr
 260 265 270
 Phe Lys His Ile Ala Lys Pro Gly Trp Lys Asn Ser Ile Arg His Asn
 275 280 285
 Leu Ser Leu His Asp Met Phe Val Arg Glu Thr Ser Ala Asn Gly Lys
 290 295 300
 Val Ser Phe Trp Thr Ile His Pro Ser Ala Asn Arg Tyr Leu Thr Leu
 305 310 315 320
 Asp Gln Val Phe Lys Gln Gln Lys Arg Pro Asn Pro Glu Leu Arg Arg
 325 330 335
 Asn Met Thr Ile Lys Thr Glu Leu Pro Leu Gly Ala Arg Arg Lys Met
 340 345 350
 Lys Pro Leu Leu Pro Arg Val Ser Ser Tyr Leu Val Pro Ile Gln Phe
 355 360 365
 Pro Val Asn Gln Ser Leu Val Leu Gln Pro Ser Val Lys Val Pro Leu
 370 375 380
 Pro Leu Ala Ala Ser Leu Met Ser Ser Glu Leu Ala Arg His Ser Lys
 385 390 395 400
 Arg Val Arg Ile Ala Pro Lys Val Leu Leu Ala Glu Glu Gly Ile Ala
 405 410 415
 Pro Leu Ser Ser Ala Gly Pro Gly Lys Glu Glu Lys Leu Leu Phe Gly
 420 425 430
 Glu Gly Phe Ser Pro Leu Leu Pro Val Gln Thr Ile Lys Glu Glu Glu
 435 440 445
 Ile Gln Pro Gly Glu Glu Met Pro His Leu Ala Arg Pro Ile Lys Val
 450 455 460
 Glu Ser Pro Pro Leu Glu Glu Trp Pro Ser Pro Ala Pro Ser Phe Lys
 465 470 475 480

Glu Glu Ser Ser His Ser Trp Glu Asp Ser Ser Gln Ser Pro Thr Pro
 485 490 495
 Arg Pro Lys Lys Ser Tyr Ser Gly Leu Arg Ser Pro Thr Arg Cys Val
 500 505 510
 Ser Glu Met Leu Val Ile Gln His Arg Glu Arg Arg Glu Arg Ser Arg
 515 520 525
 Ser Arg Arg Lys Gln His Leu Leu Pro Pro Cys Val Asp Glu Pro Glu
 530 535 540
 Leu Leu Phe Ser Glu Gly Pro Ser Thr Ser Arg Trp Ala Ala Glu Leu
 545 550 555 560
 Pro Phe Pro Ala Asp Ser Ser Asp Pro Ala Ser Gln Leu Ser Tyr Ser
 565 570 575
 Gln Glu Val Gly Gly Pro Phe Lys Thr Pro Ile Lys Glu Thr Leu Pro
 580 585 590
 Ile Ser Ser Thr Pro Ser Lys Ser Val Leu Pro Arg Thr Pro Glu Ser
 595 600 605
 Trp Arg Leu Thr Pro Pro Ala Lys Val Gly Gly Leu Asp Phe Ser Pro
 610 615 620
 Val Gln Thr Ser Gln Gly Ala Ser Asp Pro Leu Pro Asp Pro Leu Gly
 625 630 635 640
 Leu Met Asp Leu Ser Thr Thr Pro Leu Gln Ser Ala Pro Pro Leu Glu
 645 650 655
 Ser Pro Gln Arg Leu Leu Ser Ser Glu Pro Leu Asp Leu Ile Ser Val
 660 665 670
 Pro Phe Gly Asn Ser Ser Pro Ser Asp Ile Asp Val Pro Lys Pro Gly
 675 680 685
 Ser Pro Glu Pro Gln Val Ser Gly Leu Ala Ala Asn Arg Ser Leu Thr
 690 695 700
 Glu Gly Leu Val Leu Asp Thr Met Asn Asp Ser Leu Ser Lys Ile Leu
 705 710 715 720
 Leu Asp Ile Ser Phe Pro Gly Leu Asp Glu Asp Pro Leu Gly Pro Asp
 725 730 735
 Asn Ile Asn Trp Ser Gln Phe Ile Pro Glu Leu Gln
 740 745

<210> 3
 <211> 6
 <212> PRT
 <213> Artificial

<220>
<223> FoxM1B LXLXXL motif

<220>
<221> UNSURE
<222> (2)..(2)
<223> X is any amino acid

<220>
<221> UNSURE
<222> (4)..(5)
<223> X is any amino acid

<400> 3

Leu Xaa Leu Xaa Xaa Leu
1 5

<210> 4
<211> 66
<212> DNA
<213> Artificial

<220>
<223> EcoR1 T-epitope tagged FoxM1B primer

<400> 4
gcggaattca ccatggctag catgactggt ggacagcaaa tgggttggca gaactctgtg 60
tctgag 66

<210> 5
<211> 18
<212> DNA
<213> Artificial

<220>
<223> antisense primer for CMV expression vector SV-40 poly A region

<400> 5
gtttgtccaa ttatgtca 18

<210> 6
<211> 12
<212> DNA
<213> Artificial

<220>
<223> FoxM1B/FoxA binding site

<400> 6
tttgtttggt tg 12

<210> 7
 <211> 6
 <212> RNA
 <213> Artificial

<220>
 <223> transcription termination signal

<400> 7
 aaauaaa

6

<210> 8
 <211> 81
 <212> PRT
 <213> Homo sapiens

<400> 8

Pro Phe Lys Thr Pro Ile Lys Glu Thr Leu Pro Ile Ser Ser Thr Pro
 1 5 10 15

Ser Lys Ser Val Leu Pro Arg Thr Pro Glu Ser Trp Arg Leu Thr Pro
 20 25 30

Pro Ala Lys Val Gly Gly Leu Asp Phe Ser Pro Val Gln Thr Ser Gln
 35 40 45

Gly Ala Ser Asp Pro Leu Pro Asp Pro Leu Gly Leu Met Asp Leu Ser
 50 55 60

Thr Thr Pro Leu Gln Ser Ala Pro Pro Leu Glu Ser Pro Gln Arg Leu
 65 70 75 80

Leu

<210> 9
 <211> 28
 <212> PRT
 <213> Artificial

<220>
 <223> LXLXXL motif from FoxM1B amino acid residue 635 to 662

<220>
 <221> UNSURE
 <222> (2)..(4)
 <223> X is any amino acid

<220>
 <221> UNSURE
 <222> (6)..(6)
 <223> X is any amino acid

<220>
 <221> UNSURE
 <222> (8)..(9)
 <223> X is any amino acid

<220>
 <221> UNSURE
 <222> (11)..(14)
 <223> X is any amino acid

<220>
 <221> UNSURE
 <222> (16)..(20)
 <223> X is any amino acid

<220>
 <221> UNSURE
 <222> (22)..(26)
 <223> X is any amino acid

<400> 9

Leu Xaa Xaa Xaa Leu Xaa Leu Xaa Xaa Leu Xaa Xaa Xaa Xaa Leu Xaa
 1 5 10 15

Xaa Xaa Xaa Xaa Leu Xaa Xaa Xaa Xaa Xaa Leu Leu
 20 25

<210> 10
 <211> 28
 <212> PRT
 <213> Mus Musculus

<220>
 <221> MISC_FEATURE
 <222> (1)..(9)
 <223> X is D-Arg

<400> 10

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Lys Phe Val Arg Ser Arg Arg
 1 5 10 15

Pro Arg Thr Ala Ser Cys Ala Leu Ala Phe Val Asn
 20 25

<210> 11
 <211> 19
 <212> PRT
 <213> Mus Musculus

<400> 11

Lys Phe Val Arg Ser Arg Arg Pro Arg Thr Ala Ser Cys Ala Leu Ala
1 5 10 15

Phe Val Asn

<210> 12

<211> 30

<212> PRT

<213> Mus Musculus

<400> 12

Lys Phe Val Arg Ser Arg Arg Pro Arg Thr Ala Ser Cys Ala Leu Ala
1 5 10 15

Phe Val Asn Met Leu Leu Arg Leu Glu Arg Ile Leu Arg Arg
20 25 30

<210> 13

<211> 13

<212> PRT

<213> Human immunodeficiency virus

<400> 13

Met Gly Tyr Gly Arg Lys Lys Arg Arg Gln Arg Arg Arg
1 5 10